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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,909	07/31/2003	Daigo Sasaki	8022-1058	9627

466 7590 07/14/2004
YOUNG & THOMPSON
745 SOUTH 23RD STREET 2ND FLOOR
ARLINGTON, VA 22202

EXAMINER

A, MINH D

ART UNIT	PAPER NUMBER
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2821

DATE MAILED: 07/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/630,909

Applicant(s)

SASAKI ET AL.

Examiner

Minh D A

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 12-13 and 15-22 is/are rejected.
- 7) ☒ Claim(s) 4-11 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 12-13, 18-22 are rejected under 35 U.S.C. 102(b) as being unpatentable by Hirakawa et al (US 6,097,358).

Regarding claim 1, Hirakawa discloses AC plasmas display comprising: pixel (C) including a plurality sub-pixels (SF1....SF16) (See figures 3 and 6) capable of representing a plurality of gradation levels and a controller (81) having a plurality drivers for receiving input data and outputs plurality of data signals said pixel based said input data control said plurality gradation sub-pixels, wherein when a first sub-pixel plurality of said plurality of sub-pixels represents one of a minimum gradation level and a maximum gradation level of plurality gradation levels, a second sub- pixel said plurality of sub-pixels adjacent to sub-pixel represents other than the other of said minimum gradation level and said maximum gradation level. See figures 1-6, col.6, lines 22-67 to col.11, lines 1-36.

Regarding claim 2, Hirakawa discloses the plurality sub-pixels (Sf1....Sf16) carries out gradation representation by using two gradation levels of

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a first gradation level of said plurality of gradation levels and a second gradation level of said plurality of gradation levels at time. See figures 3 or 6.

Regarding claim 3, Hirakawa discloses the first gradation level is different by one level from said second gradation level. See figures 3 or 6.

Regarding claim 12, Hirakawa discloses a controller (81) have a plurality drivers divides said input data into m frames data, and scans each said plurality sub-pixels m times to represent said first gradation level p times and said second gradation level q times, wherein said p and said q are integers equal to or more than 0, said m is equal to a sum of said p and said q, and values of said p and said q depend on said each of said plurality of sub-pixels. See figures 1, 3 and 6.

Regarding claim 13, the display apparatus according claim 3, wherein said driver divides said input data into frames data, and each said plurality sub-pixels m times gradation level p represent said first and said second gradation level q times, and said q are integers equal or more than 0, said m is equal to a sum of said p and said q, and values of said p and said q depend on said of said plurality of sub-pixels. See figures 1, 3 and 6.

Regarding claim 18, Hirakawa discloses said plurality of sub-pixels have a same area. See figure 3.

Regarding claim 19, Hirakawa discloses a display apparatus comprising: representing a plurality of gradation levels on a pixel including a plurality of sub-pixels; and controlling said plurality of sub-pixels such that when first sub-pixel said plurality sub-pixels represents one minimum gradation and maximum gradation level said representing plurality gradation pixel including plurality sub-

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plurality gradation levels, second sub-pixel said plurality of sub-pixels adjacent said sub-pixel represents other than the said minimum gradation level and said maximum gradation level. See figures 1-6, col.6, lines 22-67 to col.11, lines 1-36.

Regarding claim 20, Hirakawa discloses the plurality of sub-pixels carry gradation representation using gradation levels a gradation said plurality gradation levels and a second gradation level said plurality of gradation levels time. See figures 3 and 6.

Regarding claim 21, Hirakawa discloses the first gradation is different by level said second gradation level. Seen figure 3.

Regarding claim 22, Hirakawa discloses a scanning each said plurality pixels times represent said first gradation level p and said second gradation level q times, wherein said p and said q are integers equal to or more than 0, said m is equal to a sum of said p and said q, and values of said p and said q depend on said each of said plurality of sub-pixels. See figures 3 or 6.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable by Hirakawa et al (US 6,097,358).

Regarding claims 15-17, Hirakawa discloses the claimed invention except for binary number. It would have been an obvious matter of design choice to employ a binary number since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art.

Allowable Subject Matter

5. Claims 5-11 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not teach that, the driver comprises: a gradation voltage generator which receives a bits input data, and generates a first gradation voltage corresponding to said first gradation level and a second gradation voltage corresponding to said second gradation level based on said first set of bits; and selector which receives a second set of bits in said input data together with said first gradation voltage and said second gradation voltage generated by said gradation voltage generator, and selects one said gradation voltage and said second gradation voltage be sent to each of said plurality of sub-pixels as one of said plurality data signals based on said second set of bits in dependent claim 4.

The prior art does not teach that, the driver comprises a gradation voltage generator which receives a first set of bits in said input data, generates a first gradation voltage corresponding and second gradation voltage corresponding

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said second gradation level based on said set bits, outputs said first gradation voltage and said second gradation voltage as said plurality data signals, and each of said plurality of sub-pixels comprises a selector which receives a second set of bits in said input data together with said gradation voltage and said second gradation voltage outputted from said gradation voltage generator and selects one of said first gradation voltage and said second gradation voltage based on said second set of bits in dependent claim 5.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Katakura et al (US 5,469,281) and Nozaki et al. (US 6,040,911) are cited to show a driving method for display device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Minh A whose telephone number is (571) 272-1817. The examiner can normally be reached on M-F (5:30 –2:30 PM).

If attempts to reach the examiner by telephone is unsuccessful, the examiner's supervisor, Don Wong, can be reached on (571) 272-1834. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and (703) 872-9319 for final communications.

Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center receptionist whose telephone number is (571) 272-1553.

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A handwritten signature in black ink, appearing to read "Jan Vannucci". The signature is written in a cursive style with a large, stylized initial "J".

Examiner

Minh A

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7/6/04